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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,706	05/02/2001	Qian Zhang	MS1-716US	7941
22801	7590	09/09/2004	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			LIN, KELVIN Y	
			ART UNIT	PAPER NUMBER
			2142	
DATE MAILED: 09/09/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/848,706	<b>Applicant(s)</b> ZHANG ET AL.	
	<b>Examiner</b> Kelvin Lin	<b>Art Unit</b> 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) <input type="checkbox"/>                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## Detailed Action

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 8-15, 18-21, and 25-33 are rejected under 35 USC 102(e) as being anticipated by Zombek et al., (PG PUB 2002/0032232).
3. Regarding claim 1, Zombek teaches a system comprising:
  - a network server, to provide media content on request through a wireline network (Zombek, [0021], l. 9-21)  
note: henceforth, the line number is starting from 1 at each section.
  - a wireless host, to request media content through a wireless network (Zombek, [007], l.1-3,[0018], l.12-15); and
  - a network gateway, coupled to each of the server and the wireless host, to establish a communication channel from the

server to the wireless host through both the wireline network and the wireless network, wherein the communication channel includes a transport layer protocol with control parameters for each of the wireline network and the wireless network (Zombek, [0021], I.9-11).

4. Regarding claim 2, Zombek further discloses a system according to claim 1, wherein the transport layer protocol of the communication channel enables the network gateway to distinguish transmission problems occurring within either network component of the communication channel (Zombek, [0018], I.12-22).
5. Regarding claim 3, Zombek further discloses a system according to claim 1, wherein the network server comprising:
  - A transmission rate controller to receive media content from an application and control transmission over the wireline network (Zombek, [0183], I.1-4,[0606], I.1-7); and
  - A congestion controller, to receive congestion control indication from the network gateway in the transport protocol, estimate the available bandwidth over the network, and to instruct the transmission rate controller to adjust the transmission rate accordingly (Zombek, [0435], I.13-15).
6. Regarding claim 4, Zombek further discloses a system according to claim 1, the network server further comprising:

- An application error control interface, to receive a bit-error rate (BER) control parameter from the network gateway via the transport protocol denoting the bit-error rate (BER) experienced at the wireless host (Zombek, [0433], I.6-11); and
  - A partial checksum generator, responsive to the application error control interface, to generate checksum of a dynamically selected amount of the requested content for inclusion in at least a subset of transmitted frames for error control purposes based, at least in part, on the received BER control parameter (Zombek, [0011], I.9).
7. Regarding claim 5, Zombek further discloses a system according to claim 4, the partial checksum generator includes more data in the partial checksum when the BER increase, less data when the BER decreases (Zombek, [0175], I.1-3, "...segments size can be segmented into multiple message segments...", for each partial segments the partial checksum will be calculated by the checksum function, therefore when BER increase, the retransmission will be increased, and the retransmission decrease when BER decrease ).
8. Regarding claim 8, Zombek further discloses a system according to claim 1, the wireless host comprising:
- A header analyzer, to analyze at least a partial checksum in a header of a received frame of media content to determine whether an accurate frame was received (Zombek, [0209], [0210], [0211], [0212]); and

- A bit error rate (BER) controller, coupled to the header analyzer, to generated a BER control parameter for the network gateway via the transport layer protocol denoting a running average of accurately received frames (Zombek, [0553], I.5-11).
9. Regarding claim 9, Zombek further discloses a system according to claim 1, the Network gateway comprising:
- A congestion monitor, to monitor congestion of the communication channel, and to issue a congestion control parameter to the network server via the transport layer protocol (Zombek, [0435], I.14-15).
10. Regarding claim 10, Zombek further discloses a system according to claim 1, the network gateway comprising:
- A buffer, to receive frames of media content from the network server via the wireline network component of the communication channel, and to selectively provide frames of the received media content to the wireless host via the wireless network component of the communication channel (Zombek, [0008], I.12-14).
11. Regarding claim 11, Zombek further discloses a system according to claim 10, the network gateway further comprising:
- A weighted scheduling module, coupled to the buffer, to schedule delivery of media content from the buffer to the wireless host based on their priority (Zombek, [0005], I.1-4, [0215], I.14-18).
12. Regarding claim 12, Zombek further discloses a system according to claim 10,

the network gateway further comprising:

- One or more retransmission modules, coupled to the buffer, to receive on or more of a negative acknowledgement (NACK) control parameter and/or a fading control parameter and determine whether the requested retransmission of one or more frames can be accommodated (Zombek, [0008], l.20-25, [0186], l.1-11)

13. Regarding claim 13, Zombek further discloses a system according to claim 12, wherein the one or more retransmission modules determine whether the requested retransmission may occur by determining whether a start frame, identified within the received control parameter, is available within the buffer (Zombek, [0185], l.1-12).
14. Regarding claim 14, Zombek further discloses a system according to claim 1, wherein the transport layer protocol comprises:
  - A congestion control parameter, generated by the network gateway in response to congestion detected along the communication channel (Zombek, [0433], l.1-5, [0435], l.12-16).
15. Regarding claim 15, Zombek further discloses a system according to claim 1, wherein the congestion control parameter is sent to the server for purpose of throttling transmission of the media content (Zombek, Fig. 6B).
16. Regarding claim 18, Zombek further discloses a system according to claim 1, wherein the transport layer protocol comprises:

- A negative acknowledgment (NACK) control parameter, generated by the wireless host to denote one or more frames of media content received with an unacceptably high bit-error rate (BER) (Zombek, [0433], I.6-11).
17. Claim 19 has similar limitation as claim 1. Therefore, claim 19 is rejected under Zombek for the same reason set forth in the rejection of claim 1.
18. Claim 20 has similar limitation as claim 3. Therefore, claim 20 is rejected under Zombek for the same reason set forth in the rejection of claim 3.
19. Claim 21 has similar limitation as claim 14. Therefore, claim 21 is rejected under Zombek for the same reason set forth in the rejection of claim 14.
20. Claim 25 has similar limitation as claim 18. Therefore, claim 25 is rejected under Zombek for the same reason set forth in the rejection of claim 18.
21. Regarding claim 26, Zombek further discloses a system according to claim 25, Further comprising:
- Identifying whether the frame denoted in the NACK control parameter is still available in a buffer of received media content (Zombek, [0552], I.1-5);
  - Calculating a delay measure when a NACK control parameter is received (Zombek, [0010], I.21-24); and
  - Retransmitting the frame from the buffer to the wireless host if it is identified within the buffer (Zombek, [0435], I.1-4);



- The delay measure not exceeding a threshold (Zombek, [0183], I.1-5).
22. Regarding claim 27, Zombek further discloses a system according to claim 25, wherein calculating the delay measure comprises:
- Identifying the start time of the frame denoted in the NACK control parameter (Zombek, [0128], I.9-11); and
  - Subtracting the start time from the current project time to quantitatively measure what kind of delay would be incurred by retransmitting the lost frames (Zombek, [0183], I.5-9).
23. Regarding claim 28, Zombek further discloses a computer-readable medium having computer-executable instructions that, when executed by a computer, performs the method as recited in claim 19 (Zombek, [0036], I.10-21).
24. Claim 29 has similar limitation as claim 28. Therefore, claim 29 is rejected under Zombek for the same reason set forth in the rejection of claim 28.
25. Claim 30 has similar limitation as the combination of claims 3, 6, and 8. Therefore, claim 30 is rejected under Zombek for the same reason set forth in the rejection of claims 3, 6, and 8.
26. Claims 31 and 32 have similar limitation as claims 28-29. Therefore, claims 31-32 are rejected under Zombek for the same reason set forth in the rejection of claim 28-29.
27. Claim 33 has similar limitation as claim 1. Therefore, claim 33 is rejected under Zombek for the same reason set forth in the rejection of claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. Claims 6-7, 16-17, 22-24 are rejected under 35 USC 103(a) as being unpatentable over Zombek as applied to claim 1 above, and further in view of Liao et al., (PG PUB 2002/0097722).
- Zombek differs from the claimed invention in that it fails to specify fading timeout Monitor. Liao teaches the system to identify degradation in transmission quality in the wireless network component resulting from fading and/or multipath conditions, and to issue a fading condition control parameter to the network gateway via the transport layer protocol (Liao, [0104], I.1-11).
- It would have been obvious to one of ordinary skill in art at the time the invention was made to combine the teaching of Liao with the system of fading monitor, since Liao teaches the transport layer protocol header in a speedy, efficient way that increase the network throughput.
29. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zombek and Liao as applied to claims 6-7, 16-17 above.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to application's disclosure.

- Sen et al., (Patent No. 6208620) TCP-aware Agent Sublayer (TAS) for Robust TCP Over Wireless.
- Clubb et al., (PG PUB No. 2001/0037358) System and Method to Publish Information from Servers to Remote Monitor Devices.
- Hagen Alexander, (PG PUB 2002/0075844) Integrating Public and Private Network Resource for Optimized Broadband Wireless Access and Method.
- Bonefas et al., (PG PUB No. 2002/0052968) Messaging Method and Apparatus for Routing Messages in a Client Server Environment over Multiple Wireless and Wireline Network
- Larzon - IEEE International Workshop on Mobile Multimedia Communication, Efficient use of Wireless Bandwidth for Multimedia Application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Lin whose telephone number is 703-605-1726.


The examiner can normally be reached on Flexible 4/9/5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on 703-305-9705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kyl  
8/31/04

  
JACK B. HARVEY  
SUPERVISORY PATENT EXAMINER